

OSMANIA UNIVERSITY COLLEGE OF ENGINEERING

SAMANVAYA-2013

Placement, Training Office

APTITUDE TEST

No.. of Questions: 40

Duration: 1 Hour

Name: _____

B.E/M.E/MCA _____

Roll No: _____

Mobile: _____

Email Id: _____

Instructions:

- 1) There are two sections-quantitative aptitude and verbal, logical reasoning.
- 2) Both the sections are mandatory.
- 3) Each section consists of 20 questions. Each question carries 1 mark.
- 4) There is no negative marking.
- 5) There is no individual times slot for each section.

Section-1: Quantitative Aptitude

1. Amitabh bought 2 items, A for Rs. 5,000 and B for Rs. 3,000. He sold A at a profit of 25% and B a loss of 20%. What is his overall profit or loss percentage in the transaction?
a) 8.33% loss b) 8.125% profit c) 7.625% profit d) 8.33% profit
2. One man can do a work in 100 days. 10 such men have worked for 5 days to complete a particular work. 5 more such men joined on the 6th day. How many more days will it take to finish the job?
a) 2.33 b) 3 c) 3.33 d) 4.22
3. A and B can do a piece of work in 20 days. B and C can do the same work in 25 days. C and A can do the same work in 30 days. If A, B and C all work together, how many days will they take to finish the work?
a) 600/37 b) 500/37 c) 17.21 d) 12.52

4. What is the remainder when 2^{99} is divided by 7?
a) 1 b) 2 c) 0 d) 3
5. A person mixes item A costing Rs. 300 a kilo with item B costing Rs. 50 kilo, and produces a mixture which costs Rs. 120 a kilo. What is the ratio in which the person mixes items B and A?
a) 7:18 b) 5:13 c) 12:13 d) 18:7
6. Arun travelled from Hyderabad to Bangalore half the distance at 60 kmph, and the remaining half distance at 40 kmph. What is the average speed?
a) 45 b) 50 c) 48 d) None of the above
7. 2 points P and Q are separated by 10 km. A starts from P towards Q, while B starts from Q towards P. They 1st meet at point 6 km from P. Once they reach the other end, they turn back and continue with the same speeds. Where do they meet for the second time?
a) 2 km from Q b) 3 km from P c) 1 km from P d) 8 km from Q
8. Find the greatest 5-digit number which gives a remainder of 5 when divided by 8 and 9 respectively?
a) 99931 b) 99941 c) 99936 d) None of the above
9. A conical tank of base radius 7m and height 18 m is filled up to the brim with water. This water is now transferred into a cylindrical tank of same base radius and height. How much more water will be required to fill up the cylindrical tank completely?
a) 1756 m^3 b) 1664 m^3 c) 1942 m^3 d) 1848 m^3

Instructions for Questions 10-11:

Each question is followed by two statements, A and B. Answer each question using the following instructions.

Mark (a) - If the questions can be answered using one of the statements alone, but cannot be answered using the other statement alone.

Mark(b) - If the question can be answered using either statement alone.

Mark(c) - If the question can be answered using A and B together, but not using A or B alone.

Mark(d) - If the question cannot be answered even using A and B together.

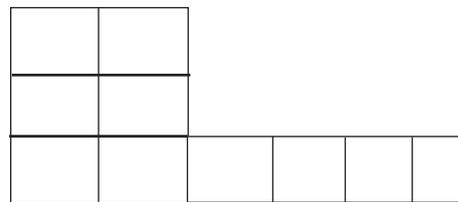
10. What is the 9th term of the geometric progression?

- a) The 5th and 3rd terms of the GP are 16&4 respectively.
- b) The 2nd and 7th terms of the GP are 2&64 respectively.

11. Train A left Hyderabad for Tirupathi at 6.00 AM, and a train B left Tirupathi for Hyderabad at 7.00 AM. Both trains travel at their respective uniform speeds. When will the two trains meet?

- a) The distance between Tirupathi and Hyderabad is 600 km.
- b) Train A reach Tirupathi at 4.00 PM and train B reaches Hyderabad at 5.00 PM.

12. In how many ways can the letters of the word "SUBJECT" be placed in the squares of the figure given below so that no rows remain empty?



- a) 5*61
- b) 10*61
- c) 11*51
- d) 13*81

13. There are 8 boys and 7 girls in a class. How can a committee of a 10 students be chosen such that at least 3 boys and 2 girls are there in the committee?

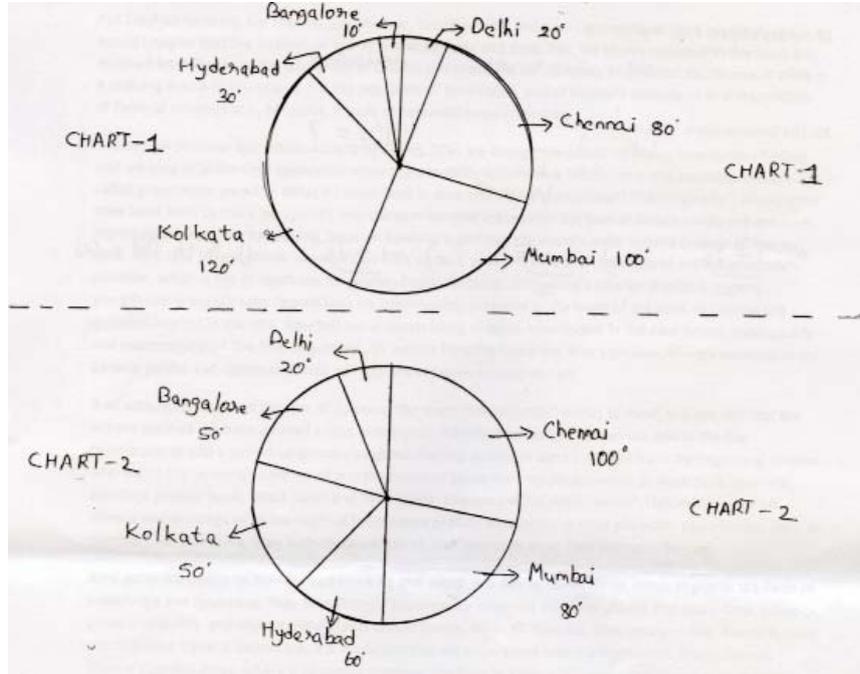
- a) 3003
- b) 3053
- c) 3503
- d) 3035

14. Box A contains 4 red and 6 green balls. Box B contains 7 red and 3 green. If a ball has been picked randomly and it turned out to be green, what is the probability that the ball is taken out from box B?

- a) 2/3
- b) 20
- c) 30
- d) 35

15. If the cost of 2 pens, 3 erasers and 4 pencils is Rs. 60. If the cost 5 pens, 4 erasers and 3 pencils are Rs. 80. Find the total cost of one pen, one eraser and one pencil?
 a) 10 b) 20 c) 30 d) 35

Directions for questions 16-18: These questions are based on the pie charts given below.



Note: All the given values are in degrees.

The above charts show the distribution of male and female employees working in the company XYZ, in its offices located at six different cities.

Chart 1 shows the distribution of the total number of female employees across the six cities and chart 2 shows the distribution of the total number of male employees across the six cities. Further, it is known that, the number of male employees in Hyderabad is twice the number of female employees.

16. The ratio of number of female employees to male employees is least in?
 a) Hyderabad b) Bangalore c) Delhi d) Kolkata
17. The number of male employees in Bangalore as a percentage of number of female employees for Chennai in company XYZ is?
 a) 12.5% b) 25% c) 62.5% d) 75%

18. The difference between the total number of female employees and total number of male employees for XYZ is?
- a) 50 b) 100 c) 200 d) None of these
19. For any event E, $P(E) + P(E^c)$?
- a) 1 b) 0 c) 1/2 d) Not defined
20. The function $F(x) = \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots \infty}}}$ $F(x) = ?$
- a) $\frac{1+\sqrt{5}}{2}$ b) $\frac{-1-\sqrt{5}}{2}$ c) $\frac{-1+\sqrt{5}}{2}$ d) Both (b) & (c)

Section-11: Verbal Ability & Logical Reasoning

Directions for Question 1-5: Answer the questions based on the passage given below.

Put Stephen Hawking, Kip Thorne, Igor Novikov, Timothy Ferris and Alan Lightman in a room together, and would imagine that the intellectual sparks would fly lively and thick. The five essays collected in this book are adapted from those sparks, talks given at Caltech to honour the 60th birthday of physicist Kip Thorne. If there is a unifying theme to the essay, it is the possibility of time travels, one of Thorne's obsessions as a theoretician of General relativity and, of course, a topic of perennial popular interest.

Theoretical physicist Igor Novikov starts by asking, "Can we change the past?" He shows how curious folding and warping of space-time apparently allow the possibility of travelling back in time and considers the so called grandfather paradox: What if I travel back in time and kill my grandfather? Then, logically, I would never have been born to make my journey into the past. Novikov argues that the laws of nature would prevent such logical paradoxes from happening. Stephen Hawking is perhaps, the worlds most famous theorist of space-time. He is less sanguine than Novikov that time travel is possible, expect on the scale of individual atomic particules, which is not of much use for science-fiction fantasies. If Hawking's take on physics is correct, grandfather is doubly safe. Thorne uses his commanding presence at the heart of the book to address the question implicit in the title: How will our understanding of space-time evolve in the near future, theoretically and experimentally? The final two essays, by writers Timothy Ferris

and Alan Lightman's, though excellent to the general public, and lightman muses on relations between science and art.

It all adds up to less than the sum of its parts. The word "Hodgepodge" comes to mind, and the fact that the editors decided the book needed a long preparatory introduction (longer than all but one of the five contributors) and a puffed up glossary suggests that the problems were apparent from the beginning. Anyone who wants the skinny on time travel and the future of space-time would do well to go directly to Thorne's excellent popular book, 'Black holes and Time wraps: Einstein's outrageous Legacy'. Lightman's piece on science and art takes us to the heart of the creative process and shows us what physicists and novelists have in common. For one thing, they both make up stories, and they both want their stories to be true.

Now go to the essays by Novikov and Hawking and watch two outrageously clever minds at play in the fields of knowledge and ignorance. They take Einstein's superemacy story - his theory of gravity and space-time, called general relativity-and make delightful riffs on the theme. What if? They ask. They agree on this: Even if it turns out that time travel is impossible, it is important that we understand why it is impossible. Finally, turn to Thorne's central essay, where it all comes together. We have in Einstein's legacy a fabulously inventive story: Black holes, time travels, ripples in space-time, and the Big Bang stuff any novelist would have been proud to invent. But the story must be put to the experimental test, and so far general relativity has passed muster.

What a story! What a test! This is the story making that lifts the human sprit out of our sometimes petty terrestrial concerns and places us among us the stars!

1. Of the scientists mentioned in the passage who are the ones whose discourses don't centre in the topic of Throne's obsession?
 - a) Novikov and Hawking
 - b) Novikov and Ferris
 - c) Ferris and Lightman
 - d) Lightman and Hawking

2. The phrase "Grandfather is doubly safe", with respect to Hawking
 - a) Indicates Hawking's opinion regarding the possibility of time travel.
 - b) Implies the fact that science fiction fantasies have their own drawbacks.
 - c) Reveals the fact that only atomic particles, but not the entire man, can travels back in time.

d) Helps us conclude that we can never undo what has been done already.

3. The most apt title to this passage would be?

- a) Meet of Intellectuals is indeed a source of intellectual sparks
- b) Time travel: An expert opinion
- c) General Relativity: A mix of bits and pieces
- d) None

4. Which of the following is/are false in the context of this passage?

- a) Novikov uses the theory of General relativity to study the feasibility of time travels because it has experimental proof.
- b) Novikov believes that time travel is independent of the twisted and convoluted shape of the fabric of space - time.
- c) Hawking was more optimistic than Novikov about the possibility of time travel.
- d) All of the above.

5. The common streak in physicists and story writers as per the passage is?

- a) Their dexterity in conjuring up new stories.
- b) Their ability to make predictions about the future.
- c) Their wishful thinking that their stories become reality.
- d) Both (A) and (C)

Directions for Questions 6,7: There are two blanks in each of the following sentences. From the pair of words given, choose the one that fits into the blanks most appropriately.

6. _____ Dedication or loyalty and excessive adoration or appreciation are some of the _____ used by the subordinates to get into the good books of their managers?

- a) Aggressive.... Strategies
- b) Ostentatious...Tactics
- c) Pretentious... Plans
- d) Sincere....Methods

7. A good teacher always has the _____ for knowledge and tries to _____ the same in his/her students?

- a) Delight...Inject
- b) Need..Inculcate
- c) Desire... Create
- d) Thirst... Instill

Directions of Question 8,9:

Each sentence has a pair of italicized and highlighted words. From these words, select the most appropriate ones and choose the correct option indicating the correctly complete set of sentences.

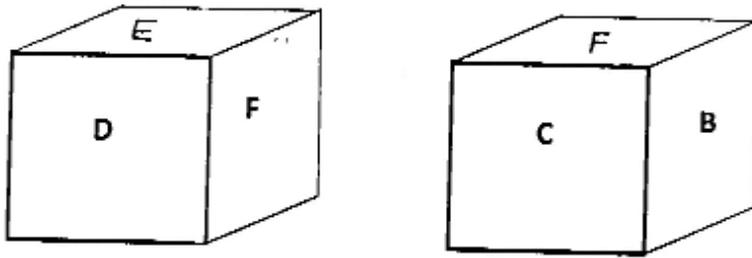
8. - The city is so beautiful that you *Lose (a)/loser (b)* yourself in it.
- The *principal (a)/ principle(b)* reason for the dramatists' failure was the awkwardly articulated pathos that ended up looking histrionic.
 - Though she wasn't *quite (a)/quiet (b)* reputed Nigella, our neighbor cooked such a tasty meal that no one had much space left for stray thoughts.
 - It had rained a lot last year, *so (a) / so that (b)* there were a lot of mushrooms for us to enjoy.
 - The train was *stationery (a) / stationary (b)* when the accident occurred.
- a) Bbbaa b) aaaba c) bbaab d) aaaab
9. -Keira *brazed (a) /braised (b)* a statue of a famous leader of the Irish war of Independence.
- The election commission has directed politicians not to canvas (a) / canvas (b) for votes to two weeks prior to the day of elections.
 - The residents refused to construct a building there as they consider *it wholly (a) / holy (b)* ground.
 - Dorothy grew up on a *dairy (a) / diary (b)* farm as was familiar with the tending of cattle.
 - Shankar can pay the fine for parking his car in a no-parking zone, or alternately(a) / alternatively (b) go to court.
- a) abbab b) bbbab c) baaab d) aaaaa
10. This question has 4 jumbled sentences. Choose the most logical order of the sentences, from among the options, such that they form a coherent paragraph.
- 1) The name of the island is derived from the Sanskrit word "Dweepa".
 - 2) At the entrance of the Gulf of Kahmbat is the picturesque little island of Diu.
 - 3) Diu, which is barely 40 sq.km in area, was once a flourishing port.
 - 4) The Portuguese occupied it in 1593.
- a) dabc b) bcad c) bacd d) adbc

11. This question has a paragraph from which a sentence has been deleted. From the given options choose the one which completes the paragraph in the most appropriate way.

Britain may be an island surrounded by majestic seascapes and old beguiling ports, but its finest waterways actually lie inland. The U.K has 3,200 km of navigable canals, left over from the 19th century, when it was the industrial manufacturer to the world. In recent years, they've been transformed into placid greenways and have become popular for tours and day trips.

- a) Short tours between two and three hours start at US \$ 300.
 - b) The canals are extremely narrow.
 - c) There are now more boats out on the water that at the peak of the industrial revolution.
 - d) The greenways, complete with bustling marinas and a system of locks still carry traditional-style narrow boats across the undulating British country- side.
12. The country X participates in a particular event, then country Y doesn't participate in that event. If country X participate in all the events, then country Y does not participate in any event. If it is known that country Y participated in 50% of the events, which of the following can be deduced?
- a) Country X participated in atleast 50% of the events.
 - b) Country X did not participate in atleast 50% of the events.
 - c) Country X participated in all the events.
 - d) Country X participated in at most 50% of the events.
13. Choose the answer choice which most logically follow the main statement.
- Main statement:** If I qualify in CAT or XAT, then I will not write MAT.
- a) I qualified in CAT but not in XAT implies I will write MAT.
 - b) I wrote MAT implies I did not qualify in XAT.
 - c) I did not write MAT implies I qualified in CAT.
 - d) I qualified in XAT but did not write MAT implies I did not qualify in CAT.

14. Given below are two different views of the same die whose faces are marked with the letters A, B, C, D, E, F. Which letter is marked on the face opposite to the face marked D?



- a) B b) A c) C d) E

Answer the questions based on the data given below:

Perikala, Qutub, Rahul, Sriram, Elden, Federer and Ganesh are the top 7 rankers in a class not necessarily in the same order. They are sitting on a bench, facing the same direction. The following information is known about them.

- I. Perikala is to the immediate right of Ganesh. Sriram is not the 2nd ranker.
- II. The 4th ranker has as many persons to his left as to his right.
- III. The 5th ranker is the 2nd person from the left end of the row.
- IV. The 1st ranker and 3rd ranker are adjacent to each other.
- V. Qutub is at the extreme left and is not the 2nd ranker.
- VI. There are exactly 3 members between the 2nd ranker and the 7th ranker.
- VII. Federer, who is the first ranker, is to the immediate right of Perikala but not to the extreme right.
- VIII. Ganesh is not the fourth ranker.

15. If Sriram is to the immediate right of Elden, who is to the immediate left of the 7th ranker?

- a) Rahul b) Perikala c) Ganesh d) Elden

16. Who is the 6th ranker?

- a) Perikala b) Qutub c) Rahul d) Federer

17. What is the rank of the person who is sitting second from the right end of the row?

- a) 1 b) 2 c) 3 d) 4

18. Given below are two statements. Choose the correct option which gives the logical deduction for the question given.

All Cats are Dogs.

All Dogs are Beasts.

- a) All Beasts are Cats
- b) All Dogs are Cats
- c) Some cats are Beasts
- d) Some Beasts are Cats

19. A sentence is given in 4 forms. Only one of them is correct grammatically. Mark it.

- a) I shall meet few people If I come
- b) I shall meet a few people If I come
- c) I shall meet a few people when I will come
- d) I will meet few people when I come.

20. Red : Danger

- a) Camaraderie : White
- b) Purple : Royalty
- c) Blue : Anger
- d) Pink : Envy

APTITUDE TEST KEY

- 1) b; 2) c; 3) a; 4) a; 5) d; 6) c; 7) d; 8) b;
- 9) d; 10) b; 11) a; 12) d; 13) a; 14) c; 15) b; 16) b;
- 17) c; 18) d; 19) a; 20) c; 21) c; 22) b; 23) b; 24) d;
- 25) d; 26) b; 27) d; 28) d; 29) a; 30) c; 31) c; 32) d;
- 33) b; 34) a; 35) d; 36) b; 37) c; 38) d; 39) b; 40) b;